

FORAGE SUITABILITY GROUP

Clayey, Dry“LRU K”

15 – 19” ppt & 90 – 120 Freeze Free Days (AWC 3-6")

FSG No.: GO43BK003WY

Major Land Resource Area (MLRA) : 43 – Northern Rocky Mountains

Physiographic Features

This area is considered the Northern Rocky Mountains with nearly all of this area being federally owned and administered by the U.S. Department of Agriculture, Forest Service and the Department of Interior, Bureau of Land Management. Most of the privately owned land is controlled by large commercial timber companies. The elevation ranges from 1,312 to 7,874 feet (400 to 2,400 meters), but is almost 9,842 feet (3,000 meters) on some mountain peaks. Some areas in Montana and Wyoming are at an elevation of 6,890 to 9,842 feet (2,100 to 3,000 meters) with some mountain peaks in excess of 14,000 feet (4,300 meters). High mountains having steep slopes and sharp crests are cut by narrow valleys, most of which have steep gradients. Lakes are common, especially in glaciated areas. The forested areas are used for wildlife habitat, for recreation and watershed, and for timber production. Meadows on the upper mountain slopes and crests above the timberline provide summer grazing for livestock and big game animals. Mining is an important industry in Idaho and in Western Montana. Dairy and livestock farms are important enterprises, mainly in the western part of the area. Less than 2 per cent of the area is cropped. Forage, small grains, peas and a few other crops are grown in some valleys. Many valleys are irrigated with the irrigation water coming from the streams.

Climatic Features

The annual precipitation ranges from 25 - 60 inches per year, increasing with elevation but may be only 15 inches in the western part of the area and up to 100 inches in the high mountains. Most of the precipitation during the fall, winter, and spring is snow. The summers are usually dry.

Temperatures are subject to wide ranges, both seasonal and day to night. Sunshine is quite abundant with few days during the year without some sunshine. Frost occurs every month of the year on the high mountains; some peaks have a continuous cover of snow and ice.

Moderate precipitation and many perennial streams and lakes provide ample water. Streams and reservoirs supply water to downstream MLRA's for irrigation and other uses. Springs and shallow wells in the valleys provide water for domestic use and for livestock. Elsewhere, ground-water supplies are small and mostly untapped.

This is in Land Resource Area “K”. The precipitation in this LRU is 15 – 19 inches and has a freeze free period of 90 to 120 days.

There is a wide variation in freeze free days and precipitation in this MLRA. Please be sure and visit with the local field office for site specific climatic information that is available in the Field Office Technical Guide, Section I, Climatic Data, <http://www.nrcs.usda.gov/technical/efotg/> or refer to the National Water and Climate Center web page at <http://www.wcc.nrcs.usda.gov>.

Soil Interpretations

This group consists of deep, moderately fine textured soils. These soils have a low water holding capacity (AWC) of 3 to 6 inches in 60 inches of root depth. They have few limitations for the management and growth of adapted plants. The permeability class ranges from slow to moderately slow.

The soil survey maps were completed for the purposes of developing plans for tracts of land and can not be used to determine the soils on or the suitability of a specific site. Consequently, small areas of significantly different soils are not identified on the maps and may occur in any map unit.

Refer to Appendix A, Forage Suitability Group Rules in Section II, of the Field Office Technical Guide, Pastureland and Hayland Interpretations for the parameters used in grouping the soils.

Soil Map Unit List

For a complete listing of soil components and what Forage Suitability Group the soil is in, refer to Appendix B, Section II of the Field Office Technical Guide, Pastureland and Hayland Interpretations.

Adapted Species List

Refer to Appendix C, Adapted Species for Forage Suitability Groups in Section II of the Field Office Technical Guide, Pastureland and Hayland Interpretations or access the electronic adapted species list at http://efotg.nrcs.usda.gov/references/public/WY/15-19_INCH_PRECIPITATION_ZONE_ADAPTED_SPECIES_MATRIX_43B_APPENDIX_C.pdf. Additional information concerning plant characteristics of a number of the listed species as well as individual cultivars of many of those species can be accessed on the web at <http://plants.usda.gov/>.

Production Estimates

Production estimates are based on management intensity (fertility regime, irrigation water management, harvest timing, etc.) and should be considered as estimates only. The estimates should only be used for making general management recommendations. On site production information should always be used for making detailed planning and management recommendations when available.

The high forage production estimates listed below are based on dense, vigorous stands of climatically adapted, superior performing cultivars. They are properly fertilized for high yields, and pest infestations are kept below economic thresholds. Mechanical harvests are managed to maintain stand life by cutting at appropriate stages of maturity and harvest intervals. If grazed, optimum beginning and ending grazing heights are adhered to. Adequate time is allowed for plant recovery before entering winter dormancy under both uses.

The production estimates listed below represent total annual above ground plant production on an air-dry-matter basis. Production on pastures in many instances is species dependent and depends if the pasture is a single species pasture or a mixture of grass species. To convert the information below to AUM's (Animal Unit Months), multiply the pounds per acre by 35 per cent and then divide by 790 (example: assume 2,800 pounds per acre: $2,800 \times .35 \div 790 = 1\frac{1}{4}$ AUM's).

Irrigation: The expected production for grass would be from 2,000 to 4,000 pounds per acre. The expected production for legumes would range from 4 to 6 tons per acre.

Dryland: The expected production for grass would be from 600 to 900 pounds per acre. The expected production for legumes would range from 3 to 4 tons per acre.

Forage Growth Curves

LRU K

Growth Curve Number: WY0012
Growth Curve Name: Cool Season Grass
Growth Curve Description: Dryland (15 – 19” precipitation)

Percent Production by Month

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	5	35	40	10	5	5	0	0	0

Growth Curve Number: WY0013
Growth Curve Name: Cool Season Grass
Growth Curve Description: Irrigated (15 – 19” precipitation)

Percent Production by Month

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	5	20	40	20	10	5	0	0	0

Growth Curve Number: WY0008
Growth Curve Name: Legumes
Growth Curve Description: Irrigated (15 – 19” precipitation)

Percent Production by Month

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	5	25	20	20	20	10	0	0	0

Growth Curve Number: WY0009
Growth Curve Name: Legumes/Cool Season Grass
Growth Curve Description: Irrigated (15 – 19” precipitation)

Percent Production by Month

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	10	30	20	15	15	10	0	0	0

Growth Curve Number: WY0014
Growth Curve Name: Legumes
Growth Curve Description: Dryland 1 cutting (15 – 19” precipitation)

Percent Production by Month

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	5	25	25	15	20	10	0	0	0

Growth Curve Number: WY0015
Growth Curve Name: Legumes
Growth Curve Description: Dryland 2 cuttings (15 – 19” precipitation)

Percent Production by Month

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	5	20	25	15	25	10	0	0	0

Growth Curve Number: WY0004
Growth Curve Name: Legumes/Cool Season Grass
Growth Curve Description: Dryland (15 – 19” precipitation)

Percent Production by Month

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	15	25	30	15	5	10	0	0	0

Growth Curve Number: WY0005
Growth Curve Name: Warm Season Grass
Growth Curve Description: Dryland (15 – 19” precipitation)

Percent Production by Month

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0		10	40	35	15		0	0	0

Management

The relationship between soils, vegetation and climate on any given site is historically driven by the ability of the plants to grow and change as conditions warrant and has allowed various species to express themselves naturally. Under agronomic conditions, production-enhancing practices have altered the original limits of the biomass production. The modification of growth factors, customized selection of species and wise use of a variety of management practices have the potential to produce yields and quality far superior to those found in the native state.

These soils when in forage management system should see organic matter at a steady or a slowly climbing state. If erosion from either wind or water is a concern, the current erosion prediction tool should be used to ensure that the erosion concern is addressed properly. Refer to the pasture and hayland planting standard or the forage harvest standard in the Field Office Technical Guide, Section IV for further management information.

FSG Documentation

Data References:

Agriculture Handbook 296 - Land Resource Regions and Major Land Resource Areas
Natural Resources Conservation Service, National Water and Climate Center (NWCC)
National Soil Survey Center, National Soil Information System (NASIS)
National Range and Pasture Handbook
Natural Resources Conservation Service, Field Office Technical Guide (FOTG)
Various Agriculture Research Service (ARS), Cooperative Extension Service (CES), and Natural Resources Conservation Service (NRCS) information on plant trials for adaptation and production.
"Dryland Pastures in Montana and Wyoming" Species and Cultivars, Seeding Techniques and Grazing Management, Montana State University, EB19

State Correlation:

This site has been correlated with the following states:

Forage Suitability Group Approval:

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<u>Original Date:</u>	8/27/02
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